National Defence / Défense nationale

1995 Annual Report

Biological and Chemical Defence Review Committee

The Committee

Clive E. Holloway (Chairman)
Heather D. Durham
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Canada

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SUMMARY

This report records the 1995 activities of the Biological and Chemical Defence Review Committee (BCDRC). It also indicates the current state of the implementation of the recommendations made in the 1988 Barton Report and the reactions by the Department of National Defence to recommendations contained in previous BCDRC reports.

We have concluded that there are neither indications of duplicity within Canada's biological and chemical defence program nor evidence to support the allegation that offense related activities are being conducted either on behalf of Canadian authorities or to comply with any multilateral treaty commitment.

It is our opinion that Canada should retain the capability to conduct a moderate program of defensive research and development to permit military operations under the threat of biological and chemical weapons.

The Committee recommends that:

I. For research purposes, vaccine strains of bioagents in lieu of pathogenic strains should be used whenever possible.

II. Consideration should be given to identifying fundamental research which would both maintain a level of basic research with direct applicability to biological and chemical defence and also have applications outside the defence sphere.

III. The Canadian Forces Publication 316 series and associated supporting documents be rewritten to reflect the current threat and in-service equipment.

IV. The Canadian Forces Nuclear, Biological and Chemical (CFNBC) School Training Library collection be reviewed and dated reference material be replaced. Additionally, the ability to access information servers, eg, Internet or World Wide Web, be provided.

V. Consideration should be given to authorizing Chief Research and Development (CRAD) to publish on a biennial basis the annual review document identified by Recommendation IV of the Barton Report.

INTRODUCTION

The policy of the government of Canada is to press for global, comprehensive and verifiable treaties to ban all biological and chemical weapons. However, while the threat from such weapons endures, Canada has an obligation to ensure that members of the Canadian Forces (CF) have adequate training and equipment to protect themselves against exposure to chemical and biological agents.

On the other hand, the Canadian public has the right to be assured that Canada's policy of maintaining only a defensive capability in this field is fully respected at all times, and that any research, development and training activities undertaken pose no threat to public safety or the environment.

To facilitate this assurance, the Biological and Chemical Defence Review Committee (BCDRC) was established by the Minister of National Defence in 1990. The Committee is mandated to review annually the research, development and training activities in chemical and biological defence undertaken by the Department of National Defence (DND) to ensure that they are defensive in nature and conducted in a professional manner with no threat to public safety or the environment. (BCDRC Responsibilities are in Annex C).

The Committee members' appointments are approved by the Deputy Minister of National Defence and the Chief of the Defence Staff on the recommendation of the Chairman of the Defence Science Advisory Board (DSAB). Nominations for BCDRC membership are solicited by the Chairman DSAB from the Royal Society of Canada, the Canadian Federation of Biological Societies, the Canadian Society of Microbiologists, the Chemical Institute of Canada and the Society of Toxicology of Canada.

The present members are:

Chairman	Dr Clive E Holloway	York University
Member	Dr Heather D Durham	McGill University
Member	Dr Raymond G Marusyk	University of Alberta

Commencing in 1990, Annual Reports have been submitted. All have been made available to the public. (See Annex B).

COMMITTEE ACTIVITIES — 1995

Between 07 May and 02 June 1995, we visited the following DND Establishments, including the associated ranges, laboratories and training facilities:

- National Defence Headquarters with staff briefings from:

  Chief Research and Development (CRAD)
  Deputy Chief of the Defence Staff
  Surgeon General

- The Department of Foreign Affairs and International Trade (DFAIT);

- Canadian Forces Base Shilo, 1st Regiment Royal Canadian Horse Artillery, and the Royal Canadian Artillery Battle School with briefings from each on the biological and chemical training being undertaken and facilities available, followed by a troop demonstration;

- Canadian Forces Nuclear, Biological and Chemical (CFNBC) School with briefings on its responsibilities, resources and training;

- Defence and Civil Institute of Environmental Medicine (DCIEM); and

- Defence Research Establishment Suffield (DRES) with briefings on the responsibilities and resources of DRES, the Medical Counter-measures Section, the Detection/Identification Section and the Physical Protection Section including current and future programs.

Reports were presented to the Committee by representatives from four Canadian non-governmental agencies who have biological or chemical research and/or developmental (R&D) contracts with DRES.

While at DRES, the BCDRC held privileged discussions with representatives of the Joint Occupational Safety and Health Committee, the three involved Unions, the Human Research Ethics and Animal Care Committees and the Establishment General Safety Officer. Further, time was made available at DRES to allow any member or groups of members to approach us to discuss matters of concern. These activities provided helpful insights into the program and morale at Suffield.

To enhance our perspective of the concerns of Canadians in Canada's biological and chemical defence activities, meetings were held at the University of Toronto with representatives of the Science for Peace Group and in Ottawa separately with John Bryden MP and William H Barton.

As charged, we reviewed DND's 1995 Biological and Chemical Defence Research and Development Program and determined that it was in accordance with current Canadian Government Policy. The latest versions of the DRES and DCIEM Annual Reports, current R&D contracts and publications lists were examined. In addition, the CRAD Accountability System Document was scrutinized.

Further, Dr Marusyk has been nominated to attend the DND Annual Nuclear, Biological and Chemical Defence Workshop in November 1995 and the Nuclear, Biological and Chemical Defence Senior Officers' Course in December 1995.

IMPLEMENTATION OF BARTON REPORT RECOMMENDATIONS

The current implementation status of the Barton Report recommendations was ascertained to be:

GENERAL

1. **In the course of the annual program and budgetary process, the authorizing officer at each level be required to sign a certificate of compliance with Departmental policies.**

   Certificates of Compliance for 1995/1996 were reviewed and found to be in order.

2. **A senior Review Committee be established in association with DSAB.**

   We constitute such a Committee.

3. **"Second opinions" should be obtained from outside sources on some of the potentially controversial test programs.**

   The BCDRC considers that the most effective way to obtain credible second opinions would be to establish external committees and to encourage collaboration through workshop type conferences. When selecting such committees, stress should be placed on geographic breadth and scientific competence of designated personnel. Nominations should be made by impartial third parties such as scientific, engineering or other scholarly societies.

4. **A document be prepared annually which would set out the nature of the research and development work under way, the number of people involved, and allocated funding.**

   The 1990/91 CRAD Review was published in February 1992, the 1991/92 Review in January 1994 and the 1992/93 Review in October 1995. The 1993/94 and 1994/95 CRAD Reviews are under production.

5. **A layman's pamphlet be published which would help improve public understanding about Biological and Chemical Defence (BCD).**

   An appropriate Departmental pamphlet was published in August 1990. A similar pamphlet entitled "Meeting the Challenge – Research and Development in Defence Sciences and Technologies", emphasizing the work at DRES, was published in April 1993.

6. **A DND directive on policies and procedures regarding the use of volunteers and animals be published.**

   DND Policy - Animal Use in R&D was issued on 15 June 1989.

   Canadian Forces Administrative Order 34-54, Use of Volunteers as Human Subjects of Research, is to be promulgated in October 1995.

DRES

1. **A procedure be established to ensure that the DRES Safety Manual is reviewed at prescribed regular intervals of not more than three years. Safety drills should also be conducted at prescribed regular intervals.**

   The procedure has been established and implemented. Safety drills are being conducted as recommended. A new safety plan, which will comply with the recommendations of the 1992 environmental audit, is in the final stages of development.

2. **An automatic annual review and certification procedure be instituted to confirm that stocks of toxic agents are being kept to the minimum level necessary for the conduct of an efficient research and development program.**

   The annual inventory audit was completed in January 1995 and reviewed by the BCDRC in May 1995. We agreed that stocks were being properly maintained at a minimum level which in most cases is only a fraction of the authorized levels.

3. **The arrangements being implemented to improve security and access controls be expedited.**

   Completed.

4. **Pending the destruction of the excess agent stocks now stored in the Experimental Proving Ground, the adequacy of existing physical security arrangements be reviewed with a view to strengthening them.**

   Completed.

5. **The incinerator which is to be acquired for the program be considered for use in the destruction of other dangerous industrial chemicals, including PCBs.**

   As the Alberta Provincial Government legislated this recommendation unimplementable, the incinerator was sold and its removal from DRES was completed by 6 August 1992.

6. **The Experimental Proving Ground (EPG) operation and maintenance be given "project" status within the CRAD program.**

   Implemented. Thus positive visibility is given to all activities, funding and personnel involved in the EPG and ensures an annual review as a separate program component.

7. **The scope of the safety and environmental requirements governing outdoor testing at DRES be determined by the provisions of the Canadian Environmental Protection Act.**

Although the present Act does not include such express provisions, the Federal Minister of Environment has said that the department will develop the requisite guidelines as and when necessary. In addition, a staff control system is in place and functioning to ensure compliance with all constraints.

8. **A full environmental audit of DRES be commissioned as soon as possible and that it be repeated at regular intervals of, say, five years.**

Acres Consultants Ltd, having completed the audit under a Supply and Services Canada contract, submitted their final report in February 1992. An internal staff agency has been situated to initiate recommendation compliance. All the Report's recommendations have been addressed and full compliance is anticipated. The Acres' report has been deposited with the Canada Institute for Scientific and Technical Information (CISTI), the National Library and major university libraries throughout the country. The follow-on audit is scheduled for 1996. The BCDRC will review progress annually.

DREO

As the entire Defence Research Establishment Ottawa (DREO) chemical agent inventory has been destroyed, all storage and handling facilities removed, laboratories dismantled and the facility decommissioned, the BCDRC will no longer report on DREO activities.

IMPLEMENTATION OF BCDRC REPORT RECOMMENDATIONS

Note: Once a recommendation has been complied with to the satisfaction of the Committee and is so recorded in a Report, it will cease to be included in subsequent Reports.

1. **The flow of information within the Defence Research laboratories between sections, management and staff might be improved — possibly through occasional informal meetings and discussions with senior managers.**

Although there is improvement in awareness levels, monitoring will continue.

2. **Career management procedures should be more closely attuned to the needs of small but extremely important units such as the CFNBC School.**

An improved personnel rotation plan which caters to enhanced continuity appears to have been adopted. Monitoring will continue.

3. **A higher percentage of CFNBC School staff should have scientific backgrounds.**

Notwithstanding progress made to date, we consider this issue to be of sufficient concern to warrant continued monitoring.

4. **Restricted agent training should continue to be conducted annually at DRES for selected military personnel.**

The intended level of compliance with this recommendation has been achieved. Monitoring, based on NDHQ Instruction DCDS 15/93 of 21 July 1993, will continue.

5. **An enhanced public relations program should be initiated to emphasize the many excellent achievements of the research laboratories.**

A noticeably improved program is in place and will be periodically reviewed by the Committee.

6. **Canada continue to develop and refine verification, compliance monitoring and investigatory techniques.**

DND relayed this concern to DFAIT, the responsible Department, who discussed it with the Committee. Constraints currently in effect necessitated a total review of government priorities. One of the results being that Canada will focus the available resources on ensuring compliance with Arms Control commitments undertaken and close cooperation with the requisite international agencies.

7. **Further consideration be given to the co-location of DRES and the CFNBC School.**

Although the technical advantages to accrue from such a move are recognized, current fiscal constraints preclude, at least in the interim, implementation.

8. **BCDRC Annual Reports should be submitted to the Ad Hoc Committee on Chemical Weapons of the Conference on Disarmament in Geneva.**

As this Committee no longer exists, it is suggested that the Reports be offered to the Review Committee of the Biological and Toxin Weapons Convention and to the Organization for the Prohibition of Chemical Weapons. DFAIT, the Department responsible for the implementation of this recommendation, has agreed and will comply. The Committee will monitor compliance periodically.

9. **The BCDRC be offered annually a vacancy on DND's Nuclear, Biological and Chemical Defence Senior Officers' Course.**

Agreed. Dr CE Holloway attended the Course in 1992 and arrangements have been made for Dr RG Marusyk to attend in 1995.

10. **An information exchange system be instituted to ensure that applicable CRAD directed research results are readily available to civilian industry.**

Agreed. This will be accomplished by increasing the distribution of CRAD Reports to interested industries, by making the Directorate of Scientific Information Services (DSIS)

Data Base readily available to non-governmental agencies, by exploiting the Supply and Services Canada (SSC) electronic information system and by DND becoming more pro-active in linkage to university research and product development. Further, the Suffield Technical Centre (STC) when established will be assigned a responsibility for this activity.

11. CRAD invite, through learned societies, a number of knowledgeable outside scientists to a workshop to discuss a biological defence research strategy for Canada for the next decade.

Consideration was given to instituting advisory committees by discipline. However, as a practical solution to the problem of constraints imposed by international agreements has not been found, reliance will be placed on acquiring assistance through consultations with the Canadian Bacterial Diseases Network and the soon to be established STC.

12. An invitation be extended to at least one member of the BCDRC to attend the annual DND NBC Defence Workshop.

Approved. Dr GL Plaa attended in 1993. Drs Holloway and Marusyk attended in 1994. Dr RG Marusyk is to attend in 1995.

13. The Annual Agent Inventories Audit Reports be restructured as follows:

a. biological agents used for research purposes are to be identified by complete strain or antigenic designator;

b. stocks of biological agents are to be quantified in meaningful terms; ie, infectious titres or colony-forming units per given volume; and

c. stocks of biological agents that are clearly not agents of biological warfare should be identified as such with an accompanying statement to the effect that such agents may be found in Public Health, University and Industrial laboratories.

Approved. This work will be completed when the DRES containment facility has been recommissioned.

14. DFAIT be requested to present annually to the BCDRC a review of the activities undertaken by Canada to comply with the arms control obligations accepted under the Biological and Toxin Weapons (BTWC) and the Chemical Weapons (CWC) Conventions.

Approved. Briefings were given to the Committee by DFAIT representatives on 02 June 1994 and 01 June 1995.

15. DND establish and publicize a means whereby access by special interest group representatives to the contents of international agreements is provided.

DND considered the various options available to implement this recommendation and discussed them internationally without success. The Committee will periodically review this issue.

16. As the Defence Research Establishment Ottawa (DREO) is no longer authorized to conduct, or capable of effecting, biological or chemical defence research, the "BCDRC's Responsibilities" be revised by deleting the requirement to visit DREO annually and to report on the current activities at this laboratory.

Approved. Completed.

17. The Defence Research Establishment Suffield's (DRES) biological agent holdings be restricted to those micro-organisms that are in frequent use or not readily available from central strain repositories.

Approved. Compliance will be effected as soon as the DRES containment facility has been recommissioned.

18. The BCDRC be contractually guaranteed access to all private sector laboratories that become involved in the Biological and/or Chemical Defence Research and Development program either under the prevailing contracting system or through the auspices of the industrial partnership proposal.

Approved. CRAD to resolve this requirement in conjunction with SSC.

19. The authorized maximum quantities of chemical agent stocks at DRES be reviewed.

Approved. The appropriate action will be initiated by CRAD.

20. An invitation be extended to at least one member of the BCDRC to attend major Biological and Chemical Defence activities such as Exercises Klaxon Kounter and Krypton Encounter.

Approved. J3 NBC will arrange.

21. Canada's current policy concerning the development and refinement of verification, compliance monitoring and investigatory techniques be reviewed.

DND relayed this concern to DFAIT, the responsible Department, who discussed it with the Committee. Recently imposed constraints have compelled Canada to concentrate available resources on complying with Arms Control commitments undertaken and instituting close cooperation with the relevant international agencies.

SOME IMPORTANT ISSUES

Concerned Citizens Groups.

The BCDRC met with representatives of the University of Toronto Chapter of Science for Peace, with John Bryden MP and with William H Barton. The primary concerns of these Canadians warrant comment. Based on our research and discussions with Departmental personnel, we offer the following:

a. **Concern:** There continues to be a lack of legislation in Canada pertaining to offensive biological and chemical weapons development and the Chemical Weapons Convention.

   Comment:: DFAIT has established the Canadian National Authority for the Implementation of the Chemical Weapons Convention. The requisite implementing Act was proclaimed in July 1995.

b. **Concern:** How do interested persons differentiate with unequivocal confidence between offensive and defensive research.

   Comment:: In general, the Committee believes that it is neither possible nor profitable to try to rigorously define the scope of these activities. However, offensive and defensive biological and chemical research can be at least partially defined in terms of the quantities involved, the activities in progress and the general intent.

   Quantities are more easily defined with chemical agents since defensive activities, such as equipment testing and decontamination drills involve only small amounts of agent, well within the limits proscribed by the provisions of the Chemical Weapons Convention. Equally, precursor chemicals should correspond on a chemical equivalence (or molar) basis with the actual agent. These quantities should be traceable from source to end agent provided that trading and shipping procedures are kept under scrutiny. Biological agents are more difficult to quantify, per se, since large amounts can be grown from a small viable colony. However, even then materials such as growth media, and sometimes specific pieces of equipment, are necessary and should be traceable and accountable.

   Activities can be subdivided into development of new or modified agents, testing procedures and training protocols. In either chemical or biological research it would be reasonable to consider deliberate attempts to enhance persistence, virulence or toxicity, or to circumvent existing defense procedures, as offensive in nature. In testing, one could differentiate between testing the agent for the properties suggested above, and testing the defensive equipment against known or suspected agents. The former should raise suspicions of offensive activity unless justified in relation to defensive capability. The latter should be part of any responsible defensive activity. Similarly, training to deliver chemical or biological agents is clearly offensive while training to protect against or neutralize such agents is a necessary part of a defensive posture.

   Intent is the least fathomable aspect. It relies heavily on interpersonal contact and interaction, and progress in confidence building measures. This point has also been outlined in the paper by Dr. David L Huxsoll of Louisiana State University, printed in Volume 666 of the Annals of the New York Academy of Sciences [The Microbiologist and Biological Defense Research: Ethics, Politics and International Security] dated 31 December 1992] to which the Committee referred in the 1994 report.

c. **Concern:** If Canada's MOUs and Agreements on BCD are relatively innocuous, as maintained by the BCDRC, why are they not published in accordance with Article 102 of the Charter of the United Nations.

   Comment:: We are given to understand that these MOUs are classified at the request of one or more of the other signatories and cannot be made public. However, DND did discuss this issue with DFAIT who in turn raised it again with the other signatories to no avail. The Committee will continue to review this item periodically.

d. **Concern:** Canada should not only continue to participate in international efforts both to develop and to improve verification methods and technologies but also should increase the activity level in this field.

   Comment:: Canada's participation in international verification activities will continue. Due to a variety of technical, financial and political factors Canada will phase out the commitment of significant R&D resources to the improvement of verification methods and technologies.

e. **Concern::** Canada has responded inadequately to the commitments specified in the BTWC.

   Comment:: DND has met completely the reporting requirements as stipulated in the Confidence Building Measures defined by the BTWC. Health Canada has annually coordinated the National reply which in turn has been submitted by DFAIT in accordance with the terms of the BTWC. It is understood that adequate legislation exists to permit Canada to meet Convention obligations.

COMMENTS

- We would once again like to express our appreciation for the candidness and cooperation given to us throughout our 1995 visits' schedule.

- Within DND's biological and chemical defence research and development program the quality of science, the projects underway, the resultant publications and the level of safety awareness continue to be of a high standard. The potential of commercial uses of the results of the work at DRES, particu-

larly in the fields of public health, medical science, geriatrics and agriculture, should be made more widely known to the public.

- As DRES's use of vaccine strains of bioagents in lieu of pathogenic strains in the research program increases, a potential public relations benefit is being created for exploitation by DND.

- The reduction in personnel through attrition to meet new staffing levels continues to cause a disparate impact in some talent groupings at individual Establishments. This matter compels significant management attention be paid to ensure that safety, employee confidence and morale continue to be paramount considerations. In addition, to allow Canada to function effectively in the biological and chemical defence fields internationally, the retention of an adequate staff of high calibre research personnel is essential.

- Some of the CFNBC School's course and reference material, particularly that relating to biological aspects, lacks currency. In addition, these publications reflect neither current NBC defence philosophy nor in-service equipment.

- Although statements describing all existing contracts with outside agencies are open to our review, the continuation of an annual briefing of the BCDRC by a cross-section of selected contractors is deemed to be necessary in order to provide us with complete confidence in the total program.

- As the CF deploy more frequently and with little warning to the lesser developed areas of the world, due recognition and effort should be given by the research and medical elements of DND to endemic natural biological hazards as well as those biologicals defined as agents.

- Middle East concerns, recent Asian events, the current state of political affairs in Eastern Europe, particularly in view of the apparent smuggling of plutonium and possibly other nuclear, biological and chemical materials, and Canada's involvement in peace restoration and peacekeeping operations in the lesser developed areas of the world all suggest that a discreet R&D program aimed at maintaining state-of-art detection and protection devices should continue. In addition, initial and annual refresher training designed to comply with NDHQ Policy Directive P/6 93 of 03 August 1993 should be carried out by all uniformed members of DND.

CONCLUSIONS

- The BCDRC found neither indications of duplicity within Canada's biological and chemical program nor evidence to support the allegation that offense related activities were being conducted either on behalf of Canadian authorities or to comply with any multilateral treaty commitment.

- The CFNBC School Training Library collection should be reviewed and dated reference material replaced. In particular, CF NBC Defence doctrine as presented in current publications should be revised to reflect prevailing threats and technology. Also, consideration should be given to providing the School with direct access to computer networks.

- We remain convinced that Canada must retain a modest capability to effect the requisite defensive research and development to permit the conduct of conventional military and counter terrorist operations under the threat of biological and chemical weapons. We believe that the priority of effort should be accorded to the following projects, which in addition to their obvious military relevance also contribute to treaty monitoring, medical support, pollution control and the handling of toxic wastes:

  a. agent detection and identification;

  b. prophylaxis and therapy for biological agents;

  c. development of less physiologically burdening individual protective clothing with wider geographical and employment specific pertinence;

  d. refinement of procedures to foresee and assess hazards posed by both established and hypothetical chemical and biological agents; and

  e. improved decontaminants.

RECOMMENDATIONS

I. For research purposes, vaccine strains of bioagents in lieu of pathogenic strains should be used whenever possible.

II. Consideration should be given to identifying fundamental research which would both maintain a level of basic research with direct applicability to biological and chemical defence and also have applications outside the defence sphere.

III. The Canadian Forces Publication 316 series and associated supporting documents be rewritten to reflect the current threat and in-service equipment.

IV. The CFNBC School Training Library collection be reviewed and dated reference material be replaced. Additionally, the ability to access information servers, eg; Internet or World Wide Web, be provided.

V. Consideration should be given to authorizing CRAD to publish on a biennial basis the annual review document called up by Recommendation IV of the Barton Report.

ANNEX A

BIOGRAPHIES OF COMMITTEE MEMBERS

Dr. Clive E. Holloway (Chairman)

A graduate in chemistry from the Bristol College of Advanced Technology and the University of Western Ontario; he is currently a Professor of Chemistry and Director of Natural Science at York University. He has been involved with the executive committee of the Chemical Institute of Canada and, at present, is active with the Association of the Chemical Profession of Ontario.

Dr. Heather D. Durham

A graduate in Pharmacology from the University of Western Ontario and the University of Alberta, she is a Professor in the Department of Neurology and Neurosurgery at McGill University and an Associate Member of the Département de médicine du travail et d'hygiène du milieu, Université de Montréal. Among her many appointments and affiliations, she has been a member of the Board of Directors of the Society of Toxicology of Canada and is also a member of the Society for Neuroscience and the Centre Interuniversitaire de Recherche en Toxicologie.

Dr. Raymond G. Marusyk

A graduate in virology from the University of Alberta and the Karolinska Institute in Stockholm; he is Professor and Chair Pro Tem, Department of Medical Microbiology and Infectious Diseases at the University of Alberta. He is President of the Canadian Society of Microbiologists and is a consultant with the World Health Organization.

ANNEX B

REFERENCES FOR PREVIOUS REPORTS

1. Research Development and Training in Chemical and Biological Defence within the Department of National Defence and the Canadian Forces: A Review by William H. Barton, Minister of Supply and Services Canada, 1989, p.54. [Available in Canada through the Canadian Government Publishing Centre, Supply and Services Canada, Ottawa, Ontario K1A 0S9. Catalogue No. D2-79/1989E, ISBN 0-660-13103-X.]

2. First Annual Report of the Biological and Chemical Defence Review Committee, Minister of National Defence, Ottawa, 1991, p.7. It is also included in the second annual Review of the Chemical and Biological Defence Program January 1990 - April 1991, Minister of National Defence, Ottawa, February 1992, p.28. [Both available through the National Defence Headquarters Library Services, National Defence Headquarters, MGen GR Pearkes Building, Ottawa, Ontario K1A 0K2.]

3. Second Annual Report of the Biological and Chemical Defence Review Committee, is included in the third annual Review of the Chemical and Biological Defence Program May 1991 - March 1992, Minister of National Defence, Ottawa, January 1994, p.26. [Available through the National Defence Headquarters Library Services, National Defence Headquarters, MGen GR Pearkes Building, Ottawa, Ontario K1A 0K2.]

4. Third Annual Report of the Biological and Chemical Defence Review Committee, is included in the fourth annual Review of the Biological and Chemical Defence Program April 1992 - March 1993, Minister of National Defence, Ottawa, October 1995, p.26. [Available through the National Defence Headquarters Library Services, National Defence Headquarters, MGen GR Pearkes Building, Ottawa, Ontario K1A 0K2.]

5. 1993 Annual Report of the Biological and Chemical Defence Review Committee, Minister of National Defence, Ottawa, June 1995, p.9. [Available through the National Defence Headquarters Library Services, National Defence Headquarters, MGen GR Pearkes Building, Ottawa, Ontario K1A 0K2.]

6. 1994 Annual Report of the Biological and Chemical Defence Review Committee, Minister of National Defence, Ottawa, June 1995, p.9. [Available through the National Defence Headquarters Library Services, National Defence Headquarters, MGen GR Pearkes Building, Ottawa, Ontario K1A 0K2.]

ANNEX C

BIOLOGICAL AND CHEMICAL DEFENCE REVIEW COMMITTE

RESPONSIBILITIES

GENERAL

1. The Biological and Chemical Defence Review Committee (BCDRC) is to review annually the research, development and training programs in biological and chemical defence undertaken by the Department of National Defence (DND) to ensure that all activities within those programs are, in fact, defensive in nature and are conducted in a professional manner with no threat to public safety or the environment.

EXECUTION

2. The BCDRC will annually:

a. visit:

(1) The Defence Research Establishment Suffield (DRES);
(2) The Defence and Civil Institute of Environmental Medicine (DCIEM);
(3) The Canadian Forces Nuclear, Biological and Chemical (CFNBC) School; and
(4) at least two other DND Establishments where biological and chemical training is conducted;

b. review the annual DND Research and Development Program as originated by the Chief of Research and Development (CRAD) and approved by the Defence Management Committee;

c. review the implementation of the recommendations made in the:

(1) BARTON REPORT of 31 December 1988;
(2) 1992 Independent Environmental Audit of DRES; and
(3) previous BCDRC Reports;

d. examine the DRES and DCIEM Annual Reports, activities and records of the Human Research Ethics and Animal Care Committees and the current research and development contracts and publications lists; and

e. submit a report of their activities and findings to the Chairman, Defence Science Advisory Board (DSAB) who will convey the Report to the Chief of the Defence Staff and the Deputy Minister of National Defence.

COORDINATION

3. The Committee, consisting of a chairperson and two members representing the disciplines of chemistry, microbiology and toxicology, is to be appointed for terms of three years by DND on the recommendation of the Chairman, DSAB.

4. The DSAB will provide the requisite organizational support and will assign an executive officer to the Committee who will attend to all procedural, reporting, coordination and administrative matters as directed by the Committee.